



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/713,114

11/17/2003

Yoshiaki Hamano

117785

9759

25944

7590

07/06/2007

OLIFF & BERRIDGE, PLC

P.O. BOX 19928

ALEXANDRIA, VA 22320

EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1745

MAIL DATE

DELIVERY MODE

07/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/713,114

Applicant(s)

HAMANO ET AL.

Examiner

Cynthia Lee

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is responsive to the amendment filed on 4/30/2007. Claims 1-5 and 14 are pending. Claims 6-13 are withdrawn from further consideration as being drawn to a non-elected invention. Claims 1 and 3-5 have been amended. Applicant's arguments have been considered, but are not persuasive. Thus, claims 1-5 and 14 are finally rejected for reasons of record and for reasons necessitated by applicant's amendment.

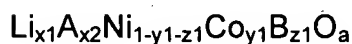
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lampe-Onnerud (US 2002/0192552).

Lampe-Onnerud discloses a positive electrode and a lithium secondary battery. The positive electrode, both the core and the coating, contains particles of the following formula



A is at least one element selected from barium, magnesium, calcium and strontium,

B is at least one element selected from boron, aluminum, gallium, manganese, titanium, vanadium, and zirconium,

Art Unit: 1745

in which $0.1 < x_1 < 1.3$ and $0.0 < x_2, y_1, \text{ or } z_1 < 0.2$.

It has been held that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists, see MPEP 2144.05.

See Abstract and [0074].

.....

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lampe-Onnerud (US 2002/0192552) in view of Lee (US 2004/0076884).

Lampe-Onnerud discloses all the elements of claim 1 and are incorporated herein. Lampe-Onnerud discloses that the positive electrode is coated with the same substance as the core material and the coating is calcined by heating the coating and the core material at a temperature range of between about 300 C and 500 C for about 0.2 hours to 4 hours, and then further heated to a temperature of between about 600 C and 900 C for about 0.2 hours to 12 hours [0051].

However, Lampe-Onnerud does not disclose that this material is an amorphous material. Lee teaches of coating a cathode material with aluminum oxide (Al_2O_3) (see abstract). Lee teaches that the modified cathode increases the charge voltage of the battery [0001] and a higher discharge specific capacity [0024]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to

substitute Lampe-Onnerud's coating for Lee's coating comprising aluminum oxide for the benefit of increasing the voltage and the capacity of the battery. Further, it has been held by the court that the selection of a known material based on its suitability for its intended use is *prima facie* obvious. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

Although Lee does not expressly disclose that the aluminum oxide coating is amorphous, the Examiner notes that it is necessarily amorphous. Table 3, pg 19 of the instant specification also uses aluminum oxide for the coating material. Further, pg. 6 and Example 2 of the instant specification pg. 18 describe the formation of the amorphous phase. The amorphous phase is mixed with the cathode active material and the resulting mixture is fired and refired. The Examiner notes that modifying Lampe-Onnerud with Lee's aluminum oxide will result in the formation of the amorphous phase as claimed by the applicant. The combination of prior art references would also possess an amorphous phase within the particles because Lampe-Onnerud refires the positive electrode. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. *In re Robertson*, 49 USPQ2d 1949 (1999).

If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show obvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983).

Response to Arguments

Applicant's arguments filed 4/30/2007 have been fully considered but they are not persuasive.

Response to arguments on rejection over Lampe-Onnerud

In response to applicant's argument that his invention has the following advantages: increase of Li ion diffusion and decomposition reduction of crystal structure under high temperatures, improvement of the power output performance, rate performance, high temperature storage performance, and cycle performance, the fact that applicant has recognized another advantage which would flow naturally from the following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

The Examiner further notes that the Specification supports of benefits of using the composition as claimed, but not necessarily unexpected. The Applicant has not provided arguments as to how Lampe-Onnerud does not read on the invention as instantly claimed.

Response to arguments on rejection over Lampe-Onnerud and Lee

Regarding the motivation of combine Lampe-Onnerud and Lee, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves

Art Unit: 1745

or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Lee teaches of the advantages of using AlO₂ coating in a positive active material. It is further noted that LiCoO₂ and LiNiO₂ are commonly used positive active materials in Li ion batteries and Lampe-Onnerud does not necessarily teach away from using LiNiO₂.

Applicant argues that substituting the coating material of Lampe-Onnerud with the coating material of Lee would not create a gradient sought by Lampe-Onnerud. However, the motivation to replace the coating material is still present because Lee teaches that the modified cathode increases the charge voltage of the battery [0001] and a higher discharge specific capacity [0024].

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1745

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ckl

Cynthia Lee

Patent Examiner


SUSY TSANG-FOSTER
PRIMARY EXAMINER